for the design of a new cemetery at Leicester, has been selected. It is in the Italian style, and the whole block of building will cover an area of 115 feet by 58, with an elevation of 60 feet. The hall will accommodate 1,800 persons sitting, or 3,000 standing. There will be galleries, and an orchestra for 200 performers, with an organ, in the hall; besides which there will be a lecture-hall, reading-room, library, club and committee rooms, curator's house, &c. The capital of the company is about 6,000*l.* The chief stone is to be laid on the 2nd June.

Nottingham.—The Arboretum is to be opened to the public under certain restrictive regulations on the 11th May. It is to be free only on two days in the week, Monday and Wednesday, and on part of Sunday. On close days a fee of 6d. for adults and youths, and 3d. for children will be exacted, except to yearly subscribers, who will pay fees of 5s. for each individual, and 10s. for each family, or 1*l.* with the additional privilege of admittance to visitors of the family not resident in the town. In place of promoting harmony and good feeling these regulations, it is feared, will establish the contrary between the inhabitants and the corporation.——In consequence of the very large amount of premature and preventible mortality indicated by the septennial returns of the registrar-general to be prevalent at Nottingham, the Central Board of Health have intimated to the sanitary committee of the council that it is probable the usual inquiry on such occasions will be instituted. The council have been discussing the subject, and have unanimously passed various explanatory and defensive resolutions and objections to the Board's interference. One of the local papers, in also objecting to the threatened investigation, expresses a fear, that "as in the case of the Poor Law, the system of centralization would destroy the good old English plan of local self-government."

Doncaster.—Building operations are becoming rather extensive here in consequence of the accommodation required by the Great Northern Plant in Doncaster. Five new streets have been planned and laid out. The houses are to consist entirely of a superior description of cottages. The laying out of such streets is, by a special provision, under the authority of the local board of health, who have power to fine, to alter, and to charge offenders with the cost. The board have given their sanction to the laying out of the new streets.——Subscriptions to the amount of nearly 500*l.* have been got towards the erection of a window in the parish church to the memory of Sir William Cooke. It is intended to remove the organ from its present position when the window is put up.

Miscellaneous.—In Middlesborough, says a contemporary, the charge for gas to private consumers is 5s. per 1,000 feet, and the public lamps, which are lighted in October and put out in March or April, according to the moon, something under 2*l.* per lamp, the company lighting, extinguishing, and keeping them in repair. In Hartlepool, where the charge to private consumers is 4s. 6d. the public lamps are charged 2*l.* 10s. each. In Stockton, 232 lamps are lighted during nine months for 2*l.* per lamp: nine nights at each moon they are not lighted, and one-half are always put out at twelve o'clock. There also the town provides the lamps; but the company keep them in repair. The charge to private consumers is 5s. per 1,000 feet. In Seaham the public lamps are 2*l.* 5s.; and private consumers are charged 3s. 4d. per 1,000 feet. In Durham, where the company find the lamps, light, extinguish, and keep them in repair, 215 are charged at the rate of 1*l.* 16s. per lamp.

GLASS BAGATELLE-BOARD.—A capital table of glass, 10 feet long by 3 feet broad, and perfectly level, according to the *Shields Gazette*, has been converted into a bagatelle-board, by Mr. Swinburne, of that town, to order. The boring of the nine holes, it is said, was the greatest difficulty experienced in its formation. If we mistake not, there is a simple method of boring glass with great facility and safety recorded somewhere in our own pages.

AMERICAN NOTES.

The Boston Fire Alarum Telegraph.—We have received a copy of the city report on the new telegraph organised throughout the city of Boston, and described on page 63 of our present volume. From this document it appears that the original estimate of Dr. Channing, exclusive of superintendence and (Morse's) patent right, was 7,959 dols. 60 cents. The actual cost, exclusive of the same is 10,749 dols. 40 cents, being an excess of 2,789 dols. 80 cents, or about 35 per cent. This excess is due chiefly to an extension of Dr. Channing's plan, according to suggestions embraced in the plan itself. Thus, there are forty signal stations placed in iron boxes on the outside of buildings, in place of twenty-six, the number in his estimate. The instruments in the central office are thus described:—A triple Morse register, a triple receiving magnet, a triple alarm bell apparatus: these, with the necessary keys and switches, are connected with the signal circuits. An instrument called the "district keyboard:" a triple alarm register and proper switches are connected with the alarm circuits. An instrument called a "testing clock" is connected with both signal and alarm circuits, and once each hour gives notice on a small bell of the integrity or interruption of the various circuits: the battery room is No. 13 of the same building. The interior of the central office, says the *Boston Transcript*, "well deserves to be considered the brain, or at least the *cerebellum* of the city. It is the centre of two sets of iron nerves, the signal or sensational system, by which it receives intelligence from every one of forty distant stations scattered all over the city, and the alarm or motive system, by which it disperses that intelligence simultaneously to all quarters of the city, and arouses its muscular energy by means of nineteen heavy bells. Thus, by a slight pressure with one of his fingers, the central operator sets in instant motion engines of alarm equivalent to nineteen stout men, and ensures absolute precision and agreement in their signals. They are made to tell the story of the locality of the fire intelligibly and unmistakably. The sensation at one point is propagated through the central office, or brain, to all parts, almost as quick as thought. The mechanical adjustments in this office are very ingenious and beautiful, and reflect great credit on Mr. Farmer (superintendent of construction) and Dr. Channing (the originator)."

Preservation of Trees.—"The efficiency of a decoction of tobacco," says the *Home Journal*, "in preserving elm, linden, and other shade trees from the ravages of the worm, has been satisfactorily established by repeated experiments. The decoction is destructive both to the bug which feeds on these trees, and to the eggs which it deposits on the other side of the leaf. The proper time for the application is as soon as the leaves are well developed, at which time the presence of the bug may be easily perceived.

Tubular or Suspension Bridge of Planks.—A patent has been secured by Mr. Animi White, of Boston, and partner, for a new mode of constructing suspension and tubular bridges, chiefly of seasoned planks or boards, so as to supersede all necessity for the erection of piers in crossing rivers even 1,500 feet broad by railway. The following particulars are condensed from Messrs. White and Thayer's own description:—First, erect the towers on good firm abutments, or on a rocky bank; then extend across the stream two or more sets of stringers, according to the number of road-beds needed. Each stringer is made by selecting a tree of proper size, which is sawed square and is tapered from the top to within about 5 feet of the base. This serves as a starting point, on which are spliced good sound boards, 6 or 7 inches in width, on a curve of 40 feet in 500, till the required length and thickness is obtained, the whole terminating in a corresponding timber, which forms the other extremity. In securing one board upon another, care is taken to fix keys of wood or iron into mortises, made into one board and half into the other, to prevent the stringer from elongating. This suspension chain or stringer is run across the stream by means of a wire cable and pulleys, and when locked and keyed fast in the towers, with the two backstays, is allowed to take a catenary curve. After a sufficient number has been extended across, the suspension rods are bolted to them and to the girders, which are made slightly arching, and to the floor-joist. The rafter is connected with the stringer and top of the suspension rod, to which is bolted the roof, constructed of double diagonal boarding. The floor, if a turnpike bridge, made of double diagonal planking, bolted together, is then laid, and, in the capacity of cross-bracing, serves to render firm the whole structure. If a railroad bridge, the cross-bracing is fitted under the floor-joist, in connection with the girders. By loading either kind of bridge with double the weight it is required to sustain, the girders will be brought down to a level, and while the weight is on, the sides are covered with a double diagonal boarding, similar to that of the roof, both of which must be firmly attached to the towers and backstays, to form a part of the strength of the bridge.

The Mountain Drill.—There is in course of completion at Souther's Globe Works, South Boston, a machine thus entitled, the invention of Mr. Charles Wilson, of Springfield, Massachusets, and intended to be used in building the Hoosac Tunnel. It consists of a large wheel, having a thin rim, projecting five feet from its outer edge, mounted with steel cutters of such a size, and so arranged, as to cut, when in motion, a circular trench or groove in the face of the rock 1 foot wide, and of the entire diameter of the tunnel—24 feet. The revolving shaft of the drill is on a sliding frame, which rests upon a main bed, supported by flanged carrying wheels, 5½ feet diameter, and is fed forward, with the sliding frame, by means of a powerful screw, the distance through which it is made to pass with its wheel and cutters being 5 feet for each adjustment of the machine, that being the depth of the rim upon the main wheel: buckets are placed on the rim, also, into which the rock cut away is gathered. To the end of the shaft, and in the centre of the circle described by the motion of the cutter, a drill of 6 inches diameter is attached, which enters with the cutters, and the same distance, into the rock. This is, then, the mechanical construction of this monstrous mole. Its application is easy: the approaches to the tunnel being prepared, and a track laid for the purpose, the drill is brought against the face of the rock, the shaft, with its wheel and cutters put in motion, and being kept properly screwed up, the circular trench will be cut, the central drill entering at the same time. When the rim of the wheel has cut into the rock its full depth, the machine is to be drawn back, a charge of powder placed in the central hole, and the rock within the circular trench will be removed at one blast. One of the arms of the main wheel is made removable, so as to allow a car to pass under the machine, into which the broken fragments will be loaded and deposited at the mouth of the tunnel, and the machine is again placed to recommence its operations. Its entire weight is from 80 to 90 tons, the weight of the shaft 11 tons, and that of the main wheel 30 tons. The intention is that it shall be driven by stationary engines; and two of forty-horse power have been constructed, and are all ready to commence work.

The Great Wheeling Bridge.—A decision as to the longer existence of this bridge over the Ohio has at length been arrived at by the Supreme Court of the United States after a protracted litigation of two years. The wheeling, it will be recollected, is a suspension-bridge with a clear span of 1,010 feet, and 92 feet above the river, sufficiently high to allow all the steamboats running to Pittsburg to clear it with their chimneys, excepting only seven of large size, which are compelled, when passing the bridge at high-water, to lower theirs. In consequence of this a complaint was made, and the removal of the bridge demanded as an unconstitutional obstruction to the navigation injurious to the commerce of the river, and a nuisance. In this view the court accorded,

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